

PIXEL BORDER FOR  
IMPROVED VIEWABILITY  
OF A DISPLAY DEVICE

5 ABSTRACT OF THE INVENTION

10 A display device having a display matrix including a pixel border of width  $x$  and located around the edge locations of the matrix for improved viewability. In particular, the border can be several pixels wide, e.g.,  $1 < x < 5$ . In one embodiment, the border is two pixels wide and surrounds a liquid crystal display (LCD) matrix area in which

15 images are generated from a frame buffer memory. In one embodiment, the pixels of the border are "dummy pixels" each containing a red, a green and a blue subpixel. Each subpixel has a color filter and is manufactured with a "dummy" transistor which operates to fix open the subpixels thereby allowing a predetermined amount of

20 "white" color brightness through the dummy pixels. In one implementation, the brightness amount is approximately 80-95 percent of the saturation brightness for the display screen. The pixel border is useful for increasing viewability of characters that are displayed along the edge of the LCD matrix area in which images are generated from a frame buffer memory. The pixel border is particularly useful for these edge displayed characters when the background color is white and the characters are

generated using a non-white color. The pixel border is also advantageous in that it can be used with conventional character generation processes of the operating system of the computer used to drive the display screen. In one embodiment, the novel display can be used within a portable computer system or other portable electronic device.